1. A microturbine system for the generation of electrical and mechanical power, said microturbine system including a positive displacement compressor and a positive displacement expander.

2. The microturbine system of claim 1 wherein said compressor and said expander are interconnected for integrated operation.

3. The microturbine system of claim 2 wherein said compressor and said expander are interconnected by a common shaft.

4. The microturbine system of claim 1 wherein said positive displacement compressor is an axial vane rotary device

5. The microturbine system of claim 1 wherein said positive displacement expander is an axial vane rotary device.

6. The microturbine system of claim 1 further including a heat exchange unit for recovery of heat energy from a driving fluid exhaust from said expander and at least one combustor for heating said driving fluid prior to entering said expander

7. The microturbine system of claim 1 further including at least one combustor for providing heat energy to said driving fluid prior to its entering said expander.

8. The micro-turbine system of claim 1 wherein said expander includes at least one inlet port for the introduction of a driving fluid to said expander and has a combustor for said inlet port.

9. The microturbine system of claim 1 wherein said expander includes four inlet ports for the introduction of a driving fluid to said expander and includes a combustor for each said inlet port.

10. The microturbine system of claim 8 wherein said driving fluid is selected from the group consisting of air, propane, methane, butane carbon dioxide, natural gas, landfill gas and mixtures thereof

11. The microturbine system of claim 10 wherein said driving fluid is air.

12. A method for the generation of mechanical and electrical power comprising the steps of:

a. introducing a driving fluid at ambient pressure in temperature to a positive displacement axial vane rotary compressor to compress said driving fluid;

b. compressing said driving fluid;

c. preheating said compressed driving fluid;

d. heating said preheated compressed driving fluid to a temperature of between about 1800° F. to about 2600° F.;

f. introducing said compressed and heated driving fluid to an axial vane rotary expander whereby the expansion of said driving fluid in said expander is translated to rotation for driving an output shaft.

13. The method of claim 12 whereby rotation of said axial vane rotary expander produces rotation of said positive displacement axial vane compressor by a common shaft linking said expander and said compressor.

14. The method of claim 12 wherein said driving fluid is selected from the group consisting of air, propane, methane, butane carbon dioxide, natural gas, landfill gas and mixtures thereof.

15. The method of claim 12 further including the step of recovering said heated drive fluid from said axial vane rotary expander and passing it through a heat exchanger to recover heat energy therefrom.

16. The method of claim 15 further including the step of passing said compressed driving fluid through said heat exchanger thereby to preheat said driving fluid prior to heating it for introduction to said expander.